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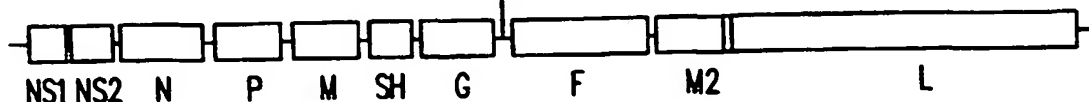
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[Continued on next page]

(54) Title: RESPIRATORY SYNCYTIAL VIRUSES EXPRESSING IMMUNE MODULATORY MOLECULES

XmaI GENE-START mIFN γ ORF GENE-END XmaI
5'-CCCGGGATGGGGCAAATAatg [shaded box] tgaAGTTATTAATAAATCCCGGG...

5'-AGGCCCCGGGGCCCT
XmaI



(57) Abstract: Recombinant respiratory syncytial virus (RSV) are provided which express one or more immune modulatory molecules. The recombinant virus is modified by addition or substitution of a polynucleotide sequence encoding the immune modulatory molecule, which is preferably a cytokine. Introduction of the cytokine increase, decrease, or otherwise enhances aspects of viral biology and/or host immune responses to RSV to facilitate vaccine use of the virus. Cytokines for use within the invention include but are not limited to interleukin 2 (IL-2), interleukin 4 (IL-4), interleukin 5 (IL-5), interleukin 6 (IL-6), or interleukin 18 (IL-18), tumor necrosis factor (TNF) alpha, interferon gamma (IFN), and granulocyte-macrophage colony stimulating factor (GM-CSF). The polynucleotide or immune modulatory molecule is preferably added or substituted into the recombinant viral genome or antigenome, typically at an intergenic or other non-coding site, as a separate gene but may be otherwise expressed, for example as a fusion protein.

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— with international search report

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